

REMARKS

Claims 1, 7, 8, 11-15, 18 and 26 are amended, no claims are canceled or added; as a result, claims 1-8, 11-24 and 26 are now pending in this application.

The specification has been amended to update the priority data to include the issued patent number for parent Application Serial No. 09/483,409.

Information Disclosure Statement

Applicant submitted a Supplemental Information Disclosure Statement and a 1449 Form on June 2, 2004. Applicant respectfully requests that an initialed copy of the 1449 Form be returned to Applicant's Representatives to indicate that the cited reference has been considered by the Examiner.

§102 Rejection of the Claims

Claims 1-3, 5, 7, 8, 11-14 and 26 were rejected under 35 U.S.C. § 102(b) for anticipation by Takemura (U.S. 5,666,020). Applicant respectfully traverses this rejection.

The cited reference of Takemura discloses an emitter (generally 20) with a top portion of the emitter tip (20a) having the highest resistance of any other part of the emitter (col. 4, lines 45-48 and col. 5, lines 13-16). There may be a coating of platinum silicide, titanium silicide, tungsten silicide, or molybdenum silicide at the top of the emitter 20 (see col. 5, lines 22-25), and that the emitter has a resistance that increases toward the top of the emitter (col. 5, lines 3-5). Applicant respectfully submits that Takemura discloses that the portion of the emitter closest to the tip is coated with a third material (col. 5, lines 22-23). Applicant submits that the present application generally recites a material that is embedded in the emitter and covers substantially the entire emitter, as shown in figure 3 with the layer 306 extending over the emitter 301 over substantially the entire area of the emitter 325, and as further shown in figure 4 with layer 418 substantially extending over the entire emitter 401, denoted by 425.

The Examiner states on page 3 of the outstanding Office Action that despite Takemura's admitted silence on the recited feature of *the coating acts in the presence of outgassing to inhibit*

degradation of the at least one emitter, as found in claim 1, “that the reference discloses each and every claimed structural limitation with the recited coating material”. Applicant respectfully disagrees, and notes that the reference has a emitter tip 20a that has a different composition to have the “resistance which is simply increase in a direction towards the top of the emitter” (col. 5, lines 3-4) as shown in figures 3, 4 5, 6 and 8. Thus, the cited reference does not disclose a structurally similar emitter, even ignoring the admitted failure to disclose a coating embedded in the emitter surface.

Specifically, Applicant respectfully submits that the cited reference fails to disclose at least the recited feature of “...*having a coating embedded in substantially the entirety of the surface of the at least one emitter that releases electrons at a predetermined energy level ...*”, as found in claim 1, as amended herein. Similar claim language is found in independent claims 7, 8, 11-14 and 26. Applicant respectfully submits that the cited reference of Takemura does not disclose the inhibiting coating, the embedded coating, or the emitter coating extending over substantially the whole emitter surface.

The dependent claims are held to be in patentable condition at least as depending from base claims shown above to be patentably distinct over the cited reference. In view of the above noted failures of the cited reference to disclose recited features of the present claims, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Claims 1-3, 5, 11-16, 18-21, 23, 24 and 26 were rejected under 35 U.S.C. § 102(e) for anticipation by Forbes et al. (U.S. 6,232,705). Applicant respectfully traverses this rejection.

The cited reference of Forbes discloses a field emitter array with both the porous gate insulator and the cathode simultaneously formed from a polysilicon layer, using an anodic etch technique. The polysilicon emitter cone 201 in figure 2, may be covered on the tip by a layer of molybdenum deposited at a 45 degree angle (as shown by arrows 230 in figure 2G) to form the tip material 218. Thus, the tip material 218 is disclosed as being on the emitter tip and is not disclosed to cover the entire emitter 201.

Specifically, Applicant respectfully submits that the cited reference fails to disclose at least the recited feature of “...*having a coating embedded in substantially the entirety of the surface of the at least one emitter that releases electrons at a predetermined energy level ...*”, as

found in claim 1, as amended herein. Similar claim language is found in independent claims 11-15, 18 and 26. Applicant respectfully submits that the cited reference of Forbes does not disclose the inhibiting coating (as admitted by the Examiner on page 4, third paragraph), or the emitter coating extending over substantially the whole emitter surface.

The dependent claims are held to be in patentable condition at least as depending from base claims shown above to be patentably distinct over the cited reference. In view of the above noted failures of the cited reference to disclose recited features of the present claims, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Claims 1, 4 and 6 were rejected under 35 U.S.C. § 102(b) for anticipation by Koga et al. (U.S. 5,925,891). Applicant respectfully traverses this rejection.

The cited reference of Koga discloses a withdrawn electrode 19A that has a circumferential diameter that is smaller than the openings in the first and second insulator films 16A and 18A (figure 1 and col. 10 lines 23-42). The film 20 or 20 is "formed indiscreetly over the surfaces of the cathode and of the portions of the substrate exposed in the opening of the withdrawn electrode" (figure 1(a) and col. 5, lines 20-24; and figure 9(b) and col.12, lines 48-53). The coating 20 is formed by sputtering and coats the cathode 17, the bottom of the well on the substrate 11, and the top of the withdrawn electrode 19A. This coating is not an embedded coating and is formed on the surface of the cathode, substrate and electrode. The coating 20 or 22 or 23 are not patterned or etched, but rely upon the overhang of the withdrawn electrode 19A over the insulator layers 16A and 18A to ensure that no continuity of the layer 20 results in short circuiting of the adjacent cathodes 17.

The cited reference at least fails to disclose that the coating is embedded in the emitter, and is thus an inappropriate reference. Specifically, Applicant respectfully submits that the cited reference fails to disclose at least the recited feature of "...*having a coating embedded in substantially the entirety of the surface of the at least one emitter that releases electrons at a predetermined energy level ...*", as found in claim 1, as amended herein.

The dependent claims are held to be in patentable condition at least as depending from base claims shown above to be patentably distinct over the cited reference. In view of the above

noted failures of the cited reference to disclose recited features of the present claims, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

§103 Rejection of the Claims

Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Forbes et al. (U.S. 6,232,705) in view of Liu (U.S. 5,880,554). Applicant respectfully traverses this rejection.

The cited reference of Forbes has features and failures that have been discussed above. The cited reference of Liu is used in the outstanding Office Action to show that a field emitter display including phosphorescent matter is known.

Applicant respectfully submits that the cited Liu reference does nothing to correct the above noted failure of the cited Forbes reference to describe or suggest at least the claimed combination of features of “...*having a coating embedded in substantially the entirety of the surface of the at least one emitter ...*”, as recited in claim 15 from which claim 17 depends. Thus, whether or not the suggested combination of references is proper and contains motivation to make the suggested combination, the result still does not continue each and every feature of the claim in question.

In view of the above noted failure of the suggested combination of references to describe or suggest the features of the present claim, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Forbes et al. in view of Hush (U.S. 5,663,742). Applicant respectfully traverses this rejection.

The cited reference of Forbes has been discussed above. The cited reference of Hush is used in the outstanding Office Action to show that field emitter devices used as camcorder viewfinder is known. Applicant respectfully submits that the cited Hush reference does nothing to correct the above noted failure of the cited Forbes reference to describe or suggest at least the claimed combination of features of “...*at least one emitter having a coating embedded in substantially the entirety of the surface of the at least one emitter that releases electrons at a predetermined energy level, the coating is stable in the presence of the outgassing ...*”, as recited in claim 18, as amended herein, from which claim 22 directly depends. Thus, whether or not the

suggested combination of references is proper the result of the combination still does not continue each and every feature of the claim in question.

In view of the above discussion, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

BEHNAM MORADI ET AL.

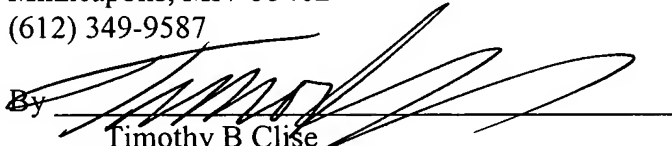
By their Representatives,

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Date

1 Jan '06

By


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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 9 day of January, 2006.

KATE GANNON

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Signature